Asset Management Business Solutions International Conference

Official Conference Proceedings

eISBN: 978-967-26533-0-1

Organised by:

Centre For Real Estate Studies, Universiti Teknologi Malaysia

AMBIS
Asset Management Business Solution International Conference

PROCEEDINGS OF ASSET MANAGEMENT BUSINESS SOLUTION INTERNATIONAL CONFERENCE AMBIS 1.0 2021

Centre for Real Estate Studies
Institute for Smart Infrastructure and Innovative Construction

Universiti Teknologi Malaysia

Perpustakaan Negara Malaysia Cataloguing-in-Publication Data

ISBN 978-967-26533-0-1

Editors: Low Sheau-Ting, Nurul Syakima Mohd Yusoff, Azizah Ismail, Ezdihar Hamzah, Siti Asiah Tukirin,Syed Putra bin Syed Abu Bakar.

Cover Design: Izran Sarrazin bin Mohammad

Published in Malaysia by
Centre for Real Estate Studies,
Institute for Smart Infrastructure, and Innovative Construction,
Blok T06, Faculty of Built Environment and Surveying
Universiti Teknologi Malaysia
81310 Utm Johor Bahru, Johor, Malaysia

IBS in Residential Projects; Dissolving the Problems of On-site Component Installation

Paper ID: 2021:015-048
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Abstract. Installation the IBS components require detail precision and proper process, if not, the IBS adoption will not bring faster and cheaper cost but instead expose to spending more time for rectification of the defective works. Identifying the difficulties in conducting installation of IBS components is paramount, which need detail supervision work. Without proper supervision during installation, the IBS in residential projects will not only expose to delay, quality disputes, and design clashes but will also cause misconceptions and coordination problems. The objective of this research is to discover the problems that mostly occur during IBS components installation at site and propose ways to avoid those problems. Besides, the bad effects of the installation problems were also discuss based on the perspective of every stakeholder who involve in IBS residential projects. A questionnaire survey comprising 26 questions was designed in this study to ascertain the challenges/suggestions regarding current practice on IBS installation and its supervision in housing projects. To further validate the collected data, semi-structured interviews were conducted to solicit views from experienced IBS practitioners. The results reveal that the main challenges in supervising to install IBS components are on hardly to find skillful supervision team, supervision additional fees, and IBS components handling. As for solution, most respondents agreed that the IBS installation can be improved by regulating for supervision as mandatory, provide clearer method statement and constant monitoring. At present, most contractors choose to install the IBS components without having supervision as this require fees, and thus many installation facing defects problems. As conclusion, IBS targets for better quality, cost effective and faster completion for Malaysian residential projects is hard to achieve due to lack attention on dissolving the problems involving components installation.

1.0 Introduction

The government had launched numerous efforts to increase the performance of the local construction industry, among which include implementing an industrialized building system (IBS), which represents an innovative approach to prefabrication concept in the industry. The housing sector is the most suitable from adopting IBS because it involves repetitive design and construction, produces many units at one time, and requires fast construction within a controlled budget and it must cater to high demand within a short period of time (Rohana, 2016; Pan et al., 2008; CIDB, 2007). Therefore, various supports had been given by the government to attract more housing developers to adopt IBS in their housing projects.

Although IBS had been implemented in Malaysian housing projects since the 1960s, progress is still slow and many industry players are reluctant to adopt IBS as their preferred building method. This scenario is surprising given the many benefits that IBS can offers (CIDB, 2015b). Construction players are still facing various issues and challenges when adopting IBS, particularly concerning contractual and procurement aspects; thus contributing to the low adoption of IBS in Malaysia (Fateh and Mohammad, 2017). Blismas and Wakefield (2009) concluded that most IBS projects face coordination barriers due to the late involvement of IBS manufacturers and their insignificant roles during project design and implementation. Using an unsuitable procurement system will not only expose the projects to delay, payment disputes, and design clashes, but it will also cause misconceptions and coordination problems that later cause to less efficient and then increase costs. IBS requires great transformations to its procurement method before it can really benefit the industry (Fateh et al., 2017).

The primary objectives of this study is to discuss the challenges in supervision to install IBS components, before suggest solutions to overcome them. The scope is this study is just on housing projects where IBS were adopted. The research questions for this study is what are the barriers on